bintec elmeg
Teldat Group Company

300 Mbit/s MIMO 2x2 802.11n by bintec

green it by bintec

MPG-zertifiziert EM-Verträglichkeit nach EN 60601-1-2

# WLAN ACCESS POINTS

.11n WLAN Access Point

## bintec W1003n

- Single Radio for 2.4 GHz or 5 GHz operation
- 802.11n 2x2 Mimo technolgy with up to 300 Mbps PHY rate
- Managed by integr. WLAN controller or stand-alone operation
- One Gigabit Ethernet port with PoE (Power over Ethernet)
- Subtle and unremarkable design for wall or ceiling mounting
- Integrated Mimo antennas for 2.4/5 GHz
- Certified for operation in medical environments

# bintec W1003n

## .11n WLAN Access Point

The bintec W1003n is an 11n access point with one dual-band radio module. The unit is a perfect match for indoor wireless infrastructures designed to provide a single frequency (2.4 or 5 GHz).

### Product description

The bintec W1003n access point has three different operating modes. You can operate the device as a stand-alone access point or manage it from a central bintec WLAN Controller. The W1003n can also function as a WLAN Controller (master access point) itself to manage up to six APs. The bintec WLAN Controller solution can be used in wireless networks with anywhere from 2 to 150 access points. The bintec WLAN Controller solution provides a scalable, end-to-end solution that lets you expand your network without migrating to a new technology. This flexibility protects your investments in existing infrastructures.

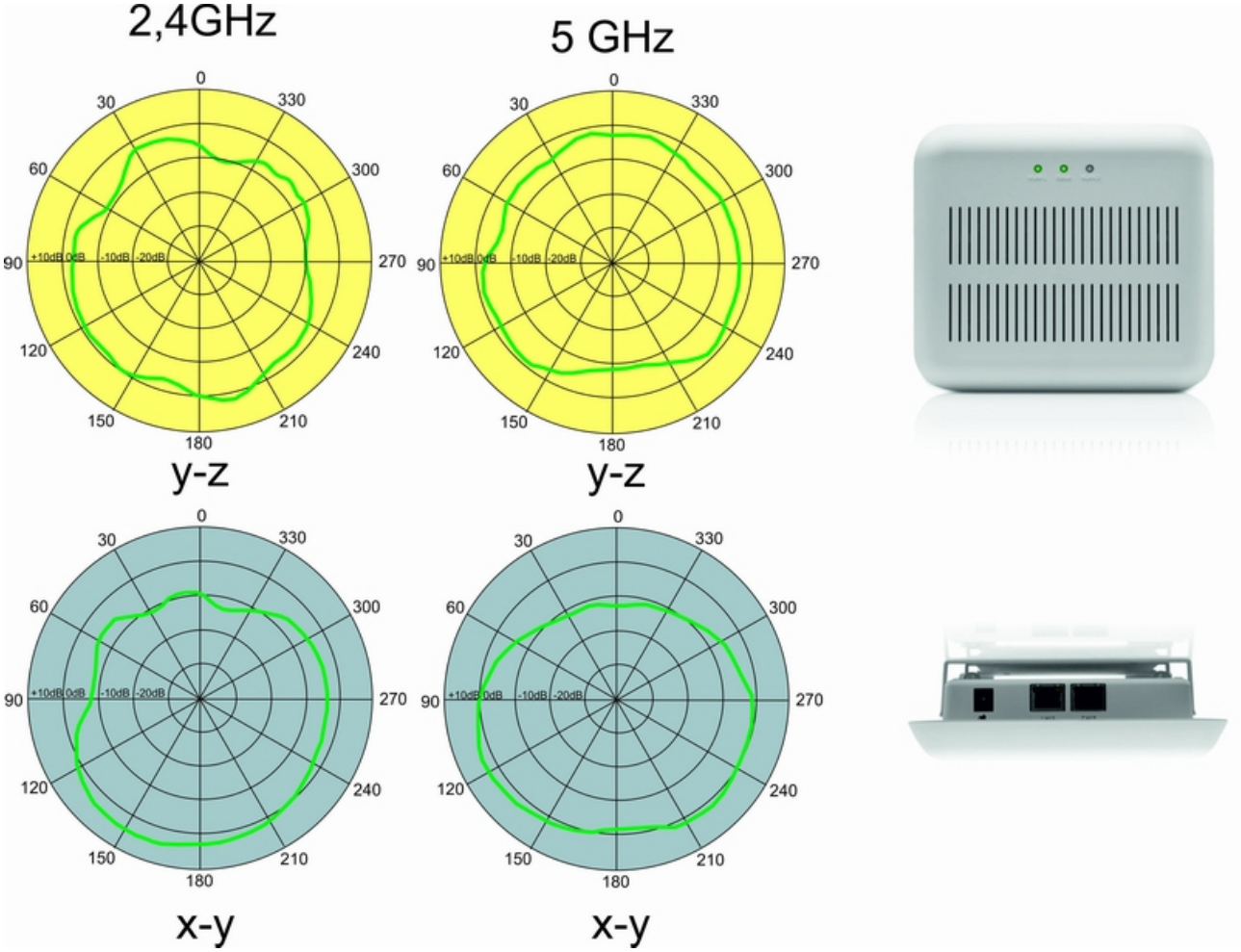
The clean lines and elegant design of the W1003n make it an appealing choice for wall- or ceiling-mounting. It also looks perfectly at home in high-end office spaces, hotels, and hospitals. Despite its handsome appearance, this access point also knows how to blend in. We've placed the antennas inside the housing, and you can turn off the LEDs to eliminate distractions.

The included mounting hardware lets you quickly and easily mount the unit onto a ceiling or wall. For protection against theft, the W1003n is also compatible with Kensington locks. As an alternative to wall-or ceiling-mounting, you can also place the device on a desktop thanks to the included rubber feet.

Take advantage of all the benefits our optional bintec HotSpot solution has to offer when using the W1003n as a stand-alone access point or together with the WLAN Controller software. Hotspots benefit hotels and restaurants, for instance, by allowing them to provide controlled wireless access to their customers.

The W1003n also supports handover and roaming. With a properly set up and surveyed wireless network managed by a bintec WLAN Controller, that means wireless devices enjoy seamless coverage in the network. And seamless coverage is a must if you are, for instance, implementing a VoWLAN (Voice over WLAN) solution or using wireless barcode scanners for logistics applications.

The W1003n gives you green IT right out of the box with its automatic energy-saving features. If no client is connected, the AP turns off any circuits not currently in use, downshifting to mimo 1x1. The Gigabit Ethernet ports support the energy-saving 802.3az standard, ensuring only as much energy as needed is used.




In addition to the Access Point operation modes the device could be used as WLAN client for direct connecting of ethernet devices (e.g. printers), to connect ethernet devices with existing wireless LANs.
Furthermore it is possible to use the device as bridge in Point-to-Multipoint operation mode with up to eight links. By the fact that a radio module can be used as Access Point and simultaneously as Bridgelink Master, it's easy to realize efficient Wireless Backbones. It is not possible to use a WLAN Controller at these both operating modes.

## Variants

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| **bintec W1003n** (5510000321) | W1003n, WLAN Access Point with a single radio module according 802.11abgn (2.4/5 GHz) Mimo 2x2, one Gigabit ETH, PoE, integrated antennas, incl. wall and ceiling mounting, incl. WLAN Controller license for Master AP, shipment without 100-240V wall adapter |

## Features

## Operation Modes

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|---|---|
| WLAN operation mode | Transparent WLAN client to connect directly ethernet devices |
| WLAN operation mode | WLAN Access Point (Managed Access Point; Master Access Point for 6 Aps; Standalone Access Point; Standalone Access Point + Bridgelink Master) |
| WLAN operation mode | Bridgelink (Point-to-multipoint) with up 8 links |
| WLAN | WLAN = Radio off; WLAN = Stand alone Access Point; WLAN = Managed Access Point; WLAN = Master Access Point for 6 APs |

## Security

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| Performance Monitoring | Tracks performance values for complete WLAN Controller, for the Access Point, the SSID anf for the dedicated, connected WLAN clients. This feature helps to analyze performance or to figure out bottlenecks. This feature requires a WLAN Controller. |
| Encryption WPA/WEP | WPA personal, WPA enterprise, WPA2 personal, WPA2 enterprise, WEP64 (40 Bit key), WEP128 (104 Bit key) |
| IEEE802.11i authentication and encryption | 802.1x/EAP-MD5, 802.1x/EAP-TLS, 802.1x/EAP-TTLS, 802.1x/EAP-PEAP, key management, PSK/TKIP encryption, AES encryption, 802.1x/EAP |
| Access control list (ACL) | MAC address filter for WLAN clients (white list) and dynamic and static blacklist. Black list function requires WLAN Controller |
| WIDS (Wireless Intrusion Detection System) | Rogue AP detection: detect foreign Aps, which try to spy out data via SSIDs by permanent background scanning. This functionality requires WLAN Controller. |
| WIPS (Wireless Intrusion Protection System) | Rogue Client Detection: detection and protection: detect conspicuous clients, which try to intrude or interfere the wireless network.In threat case blocking by dynamic black list. This functionality requires WLAN Controller. |
| WIDS (Wireless Intrusion Detection System) | Neighbor AP Detection: detection of neighbor Aps with possible influence on performance of own network. By detected intrusion: SNMP trap or email alert. This functionality requires WLAN Controller. |
| VLAN | Network segments on layer2 possible. Per SSID one VLAN ID available. Static VLAN configuration according IEEE 802.1q; up to 32 VLANs supported. |
| Inter cell repeating | Inter traffic blocking for public HotSpot (PHS) applications for preventing of communication radio client to radio client in a single radio cell. |

## Software

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| Client Band Select | Shifting of clients to 5 GHz band |
| Client Management | Client overload protection (to much clients) and shifting of clients to other APs, if threshold is reached. |
| Airtime Fairness | Prevent performance limitation by slower or distant clients, which block the network |
| Roaming | Seamless roaming with IAPP (Inter Access Point Protocol), support according 802.11f |
| Buffer pool | For cushioning of peaks |
| WMM 802.11e QoS | Data prioritization for TOS data, 802.11e/WMM |
| WMM 802.11e power save | Support of active WLAN clients, which support 802.11e power save. |

| Software | |
|---|---|
| U-APSD | Unscheduled Automatic Power Save Delivery: this functionality contributes significantly to raise battery life of Voice-over-WLAN end devices |
| Internet dialup | PPPoE, PPTP (works at stand-alone operation or with WLAN controller, not at Master AP operation) |
| NTP | NTP client, NTP server, manually (works at stand-alone operation or with WLAN controller, not at Master AP operation) |
| DNS | DNS client, DNS server, DNS relay (works at stand-alone operation or with WLAN controller, not at Master AP operation) |
| DHCP | DHCP client, DHCP server, DHPC relay (DHCP Server and DHCP Relay works at stand-alone operation or together with WLAN controller, not at Master AP operation) |
| HotSpot | Requires a license. Works in WLC mode or in stand-alone operation, but not in Master-AP operation. |
| Roaming at Client Mode | No roaming, normal roaming, slow roaming, fast roaming, user defined roaming |

| Wireless LAN (Radio 1) | |
|---|---|
| WLAN Standards | 802.11b; 802.11g; 802.11n (Mimo 2x2) 2.4 GHz; 802.11a/h; 802.11n (Mimo 2x2) 5 GHz |
| Tx Power @ 2.4 GHz 802.11b/g | 1 Mbps 14 dBm; 2 Mbps 14 dBm; 5.5 Mbps 14 dBm; 11 Mbps 14 dBm; 6 Mbps 17 dBm; 9 Mbps 17 dBm; 12 Mbps 17 dBm; 18 Mbps 17 dBm; 24 Mbps 17 dBm; 36 Mbps 17 dBm; 48 Mbps 16 dBm; 54 Mbps 16 dBm |
| Tx Power @ 2.4 GHz 802.11n 20 MHz | MSC0/8 16 dBm; MSC1/9 16 dBm; MCS2/10 16 dBm; MCS3/11 16 dBm; MCS4/12 16 dBm; MSC5/13 16 dBm; MCS6/14 16 dBm; MCS7/15 15 dBm |
| Tx Power @ 2.4 GHz 802.11n 40 MHz | MSC0/8 15 dBm; MSC1/9 15 dBm; MCS2/10 15 dBm; MCS3/11 15 dBm; MCS4/12 15 dBm; MSC5/13 15 dBm; MCS6/14 15 dBm; MCS7/15 14 dBm |
| Tx Power @ 5 GHz 802.11a/h | 6 Mbps 15 dBm; 9 Mbps 15 dBm; 12 Mbps 15 dBm; 18 Mbps 15 dBm; 24 Mbps 15 dBm; 36 Mbps 15 dBm; 48 Mbps 14 dBm; 54 Mbps 12 dBm |
| Tx Power @ 5 GHz 802.11n 20 MHz | MSC0/8 15 dBm; MSC1/9 15 dBm; MCS2/10 15 dBm; MCS3/11 15 dBm; MCS4/12 15 dBm; MSC5/14 16 dBm; MCS6/14 12 dBm; MCS7/15 10 dBm |
| Tx Power @ 5 GHz 802.11n 40 MHz | MSC0/8 14 dBm; MSC1/9 14 dBm; MCS2/10 14 dBm; MCS3/11 14 dBm; MCS4/12 14 dBm; MSC5/14 13 dBm; MCS6/14 11 dBm; MCS7/15 9 dBm |
| Extended Performance Feature | Beamforming, MRC (Maximum Ratio Combining), Block-Acknowlegde |
| Frequency bands 2.4 GHz indoor/outdoor (EU) | 2.4 GHz Indoor/Outdoor (2412-2484 MHz) max. 100 mW EiRP (for Germany) |
| Frequency bands 5 GHz indoor (EU) | 5 GHz indoor (5150-5350 MHz) max. 200 mW EiRP allowed. This information is related to the permitted transmission power in Germany. |
| Frequency bands 5 GHz outdoor (EU) | 5 GHz outdoor (5470-5725 MHz) max. 1000 mW EiRP allowed. This information is related to the permitted transmission power in Germany. |
| Data rates for 802.11b,g (2.4 GHz) | 11, 5.5, 2 und 1 Mbps (DSSS modulation); 54, 48, 36, 24, 18, 12, 9 and 6 Mbps (OFDM modulation) |
| Data rates for 802.11a,h (5 GHz) | 54, 48, 36, 24, 18, 12, 9 and 6 Mbps (OFDM modulation) |
| Data rates for 802.11n, 20 MHz channel bandwidth | MSC0-15 allow up to 150 Mbps PHY rate at 20 MHz channel bandwidth, 2 streams, Short guard intervall |

## Wireless LAN (Radio 1)

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| Data rates for 802.11n, 40 MHz channel bandwidth | MSC0-15 allow up to 300 Mbps PHY rate at 40 MHz channel bandwidth, 2 streams, Short guard intervall |
| Receiver Sensitivity @ 2.4 GHz 802.11b/g | 1 Mbps -98 dBm; 2 Mbps -98 dBm; 5,5 Mbps -94 dBm; 11 Mbps -94 dBm; 6 Mbps -96 dBm; 9 Mbps -96 dBm; 12 Mbps -95 dBm; 18 Mbps -93 dBm; 24 Mbps -90 dBm; 36 Mbps -87 dBm; 48 Mbps -83 dBm; 54 Mbps -82 dBm |
| Receiver Sensitivity @ 2.4 GHz 802.11n 20 MHz | MSC0/8 -95 dBm; MSC1/9 -94 dBm; MCS2/10 -92 dBm; MCS3/11 -89 dBm; MCS4/12 -86 dBm; MSC5/13 -82 dBm; MCS6/14 -80 dBm; MCS7/15 -78 dBm |
| Receiver Sensitivity @ 2.4 GHz 802.11n 40 MHz | MSC0/8 -92 dBm; MSC1/9 -92 dBm; MCS2/10 -89 dBm; MCS3/11 -86 dBm; MCS4/12 -83 dBm; MSC5/13 -77 dBm; MCS6/14 -76 dBm; MCS7/15 -75 dBm |
| Receiver Sensitivity @ 5 GHz 802.11a/h | 6 Mbps -95 dBm;9 Mbps -94 dBm; 12 Mbps -93 dBm; 18 Mbps -90 dBm; 24 Mbps -88 dBm; 36 Mbps -84 dBm; 48 Mbps -82 dBm; 54 Mbps -81 dBm |
| Receiver Sensitivity @ 5 GHz 802.11n 20 MHz | MSC0/8 -94 dBm; MSC1/9 -92 dBm; MCS2/10 -90 dBm; MCS3/11 -87 dBm; MCS4/12 -84 dBm; MSC5/13 -79 dBm; MCS6/14 -78 dBm; MCS7/15 -76 dBm |
| Receiver Sensitivity @ 5 GHz 802.11n 40 MHz | MSC0/8 -92 dBm; MSC1/9 -90 dBm; MCS2/10 -87 dBm; MCS3/11 -84 dBm; MCS4/12 -80 dBm; MSC5/13 -76 dBm; MCS6/14 -74 dBm; MCS7/15 -72 dBm |
| Output power limitation ( without antenna gain) | Adjustable in following steps: 5, 8,11,14,16 dBm and maximum. Maximal power varies depending on data rate, frequency band and country setting. |
| Output power @ 2.4 GHz | Max. 20dBm |
| Output power @ 5 GHz | Max. 17 dBm |
| Automatic Rate Selection (ARS) | Available |
| Transmission rate | Automatic |
| Number of spatial streams (802.11n) | 1 or 2 |
| Bandwidth (802.11n) | 20/40 MHz (bundling of two adjoining 20 MHz channels to one 40 MHz channel) |
| Short guard interval (802.11n) | On/off switchable; increase of throughput by reduction of the guard intervals from 800ns to 400ns |
| DTIM Period | Adjustable |
| Multi SSID | Up to 16 service sets per radio module, with virtual access points and own MAC address per SSID |
| Broadcast SSID | On/off switchable |
| Power management for clients | Registering of up to 250 clients per radio module simultaneously in access point mode. Default is 32 clients. |
| Country-specific settings | Channel settings according regulatory domain (802.11d) permitted |
| RTS/CTS | RTS/CTS threshold adjustable |

## Energy Savining Functions

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| Mimo 1x1 shift down | The radio modules switching automatic to Mimo 1x1 operation, when no client is connected |
| 802.3az support | The ethernet interfaces reduce the power consumption automatically, in case that no device is connected. In the case of the usage of a short ethernet cable, the circuit reduce the transmit power. |

## Energy Savining Functions

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| LED Mode | The LEDs has three operation mode: Status, Flashing, Off |

## Maintenance

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| Configuration a. maintenance: | |
| Configuration a. maintenance: Device configuration via | Telnet, SSH, HTTP, HTTPS, SNMP |
| Configuration a. maintenance: SNMP | SNMP (v1, v2, v3), USM model, VACM views, SNMP traps (v1, v2, v3) configurable, SNMP IP access list configurable |
| Configuration a. maintenance: SNMP configuration | Complete management with MIB-II, MIB 802.11, enterprise MIB |
| Configuration a. maintenance: SSH Login | Supports SSH V1.5 and SSH V2.0, for secure connections of terminal applications |
| Configuration a. maintenance: HTTP/HTTPS | Web-based configuration (FCI). The user interface is identical with almost all bintec elmeg products. |
| Configuration a. maintenance: Secure configuration | SSH available, HTTPS, Telnet protected against 'bruce force attacks' |
| Configuration a. maintenance: Configuration export and import | Load and save of configurations; save configuration optionally encrypted; optional, automatic controlled via scheduler |
| Configuration a. maintenance: On the fly configuration | No restart is required after the configuration has been changed. |
| Configuration a. maintenance: Software update | Software updates free of charge; loadable via file, HTTP or via direct access to the bintec elmeg upload server; optional, automatic controlled via scheduler |
| External Reporting: | |
| External reporting: Syslog | Syslog client, with different levels of messaging |
| External reporting: eMail alert | Automatic eMail alert by definable events (predefined events: new neighbor AP found, new rogue AP found, new slave AP found, managed AP failed) |
| External reporting: SNMP traps | Supported |
| Monitoring: | |
| Monitoring: Internal Log | Output via web-based configuration interface (http/https); filter: subsystem, level, message |
| Monitoring: Interfaces | Statistic information of all physical and logical interfaces |
| Monitoring: WLAN | Detailed displays for radio, VSS. Displayed are per link: MAC address, IP address, TX packets, RX packets, signal strength for every receiving aerial, signal-to-noise ratio, data rate |
| Monitoring: Configurable scheduler (standalone AP) | In the operation mode 'standalone AP' the following events can be scheduled: Reboot device, activate/deactivate interface, activate/deactivate WLAN SSID, initiate 5 GHz band scan, trigger SW update, trigger configuration backup |
| Monitoring: Configurable scheduler (WLAN Controller) | In the operation mode 'WLAN Controller' the following events can be scheduled: Activate/deactivate WLAN SSID, initiate Neighbor band scan |
| Management: Supported management systems | WLAN Controller, DIME Manager, XAdmin |

| Maintenance | |
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| Management: Discovery Protocol | CAPWAP DHCP option according RFC1517 |
| Management: WLAN Controller functionallity | Can act as stand-alone AP without WLAN controller; can act for small installation with up to 6 AP as WTP-AC (Master AP); can act as WTP (Managed by a WLAN Controller) |
| Documentation | German and English documentation on CD and in the Internet for download |
| Guarantee | 2-year manufacturer's guarantee, online RMA handling |

| Hardware | |
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| Standards and certifications | R&TTE Directive 1999/5/EG; EN 60950-1 (IEC60950); EN 300 328; EN 301 489-17; EN 301 489-1; EN 301 893; EN 60601-1-2 (medical electrical devices - Part 1-2) |
| LAN / WAN | 1 x 10/100/1000 Mbps Ethernet twisted pair, autosensing, auto MDI/MDI-X |
| WLAN | 1 radio module IEEE 802.11abgn Mimo 2x2 for 2.4 or 5 GHz |
| Antenna | Integrated dual-band Mimo antenna array with two antenna elements 2 dBm gain @ 2,4 GHz 4 dBm gain @ 5 GHz |
| Real time clock | Even at power loss the system time will be available for several hours. |
| Power supply | External wall power supply 230V / 9V DC, 1,3A, with high efficient switching power supply (The wall adapter is a accessory and not include the shipment). |
| PoE | Power-over-Ethernet according IEEE 802.3af, compatible with 802.3at PoE injectors |
| Status LEDs | Status, Activity for WLAN and Ethernet, LEDs defeatable |
| Wall and ceiling mounting | Include the package |
| Desktop operation | Possible, rubber pad included the package |
| Theft protection | Theft protection integrated, Kensington ® compatibel |
| Dimensions | Approx. 15.9 cm x 14.5 cm x 4.3 cm (width x depth x hight) |
| Power consumption | < 6,5 Watt |
| Environment | Temperature operating: 0°C to 40°C; storage: -10°C to 70°C; rel. humidity 10 to 95% (non condensing) |

## Accessoires

| Access Points and Bridges | |
|---|---|
| **WLAN-Bundle 6xW1003n** (5510000349) | WLAN Bundle contains 6 Access Points bintec W1003n (5510000321) |
| **WLAN-Contr.-Bundle 10xW1003n** (5510000351) | WLAN Controller Bundle contains 10 Access Points bintec W1003n (5510000321) , 1 bintec R1202 (5510000210) and 2 WLAN Controller license (5500000943) |

| Pick-up Service / Warranty Extension |
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## Pick-up Service / Warranty Extension

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| **Service Package 'small'** (5500000810) | Warranty extension of 3 years to a total of 5 years, including advanced replacement for bintec elmeg products of the category 'small'. Please find a detailed description as well as an overview of the categories on www.bintec-elmeg.com/servicepackages. |

## Add-ons

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| **PS-US-Wx003n/Wx004n** (5500001726) | Wall power supply with US-plug for W1001n, W1003n, W2003n, W2003n-ext, W2004n, WI1003n |
| **PS-EURO-Wx003n/Wx004n** (5500001254) | Wall power supply with EU-plug for W1001n, W1003n, W2003n, W2003n-ext, W2004n, WI1003n |
| **Wall mounting Wx003n/4n/4Ge-LE** (5500001278) | Wall and ceiling mounting (spare part) for W1001n, W1003n, W2003n, W2003n-ext, W2004n, 4Ge-LE |
| **Gigabit PoE Injector** (5530000082) | PoE Injector for LAN 10/100/1000 Mbps, 100-240V, EU plug, output 48V/0.35A; suitable for Access Points, IP phones, etc. |